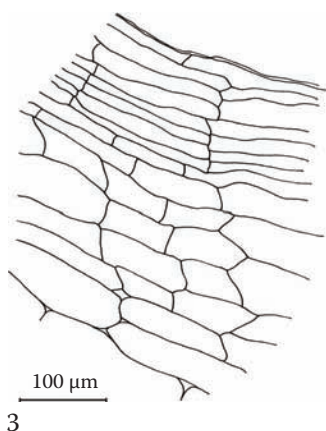
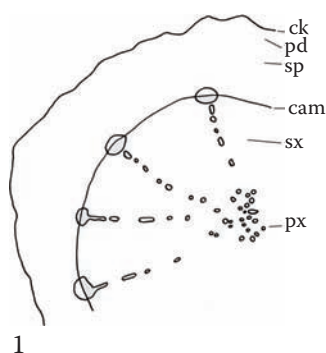


Symphytum officinale* L.*Comfrey Root***Symphyti officinale Radix**Boraginaceae*

Comfrey root has been used by modern herbalists both internally and externally for its ability to heal tissue—most specifically, internally for stopping bleeding and for mending bones and externally as a salve or compress for wounds, burns, strains, and bruising. Comfrey contains pyrrolizidine alkaloids (PAs). Concerns regarding the potential hepatotoxicity of PAs have dramatically curtailed the internal consumption of comfrey and, in Europe, have even led to restrictions of its use externally on broken skin. Domestically, *S. officinale* is the predominant species; in Europe, other species, such as *S. asperum* and *S. uplandicum*, can be found.

Transverse section: Dark brown cork; inside the cork is a phelloderm consisting of a layer of tangentially elongated parenchyma cells; secondary phloem of spheroidal parenchyma; secondary xylem predominantly of parenchyma;



near the vascular cambium, small groups of vessels are found from which small radial strands of vessels, interrupted by parenchyma, project toward the center of the root; within these strands, vessels up to 100 μm diameter are found singly or in small groups; primary xylem has vessels found singly or in small groups; parenchyma contains mucilage that becomes stringy and gluey after preparation in chloral hydrate; fibers and crystals are absent.

Longitudinal section: Vessels with reticulate wall thickening or bordered pits.

Starch: Granules mostly simple, more or less spherical, up to 10 μm diameter.

Powder: Fragments of parenchyma; few vessels with bordered pits or reticulate walls; mucilage; starch (water).

